Doklady Earth Sciences 2005 vol.400 N1, pages 89-91

Local and planetary scales of wave disturbances for synchronous measurements of atmospheric admixtures

Khutorova O., Teptin G.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

That atmospheric waves exist at different spatiotemporal scales has been demonstrated by the solution of equations related to atmosphere hydrothermodynamics. Their investigation based on measurements of atmospheric pressure is well known. Of interest are the spatial parameters of the wave processes responsible for variations in the concentration of aerosol and minor gas admixtures in the surface layer of the atmosphere. Such processes have been incompletely studied thus far. Their manifestation in series of different atmospheric parameters is often studied by digitally processing the results of experimental measurements. This paper presents results from an investigation into th e characteristics of moving disturbances. This investigation employed an original method based on a synchronous time series in the measurement of admixtures and meteoparameters in the surface layer of the atmosphere. The method is also based on analysis of the phase component in long time series cross-wavelet spectra. The basic characteristics of meso- and planetary waves were established by long-term measurements (1996-2003) at nine stations spaced from 0.9 to 260 km.